

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Paul DiCarlo et al.
Serial No. : 10/728,248
Filed : December 4, 2003
Title : MEDICAL INSTRUMENT

Art Unit : 3736
Examiner : Rene T. Towa
Conf. No. : 7802

Mail Stop Appeal Brief - Patents

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

BRIEF ON APPEAL

(1) Real Party in Interest

The real party in interest is Boston Scientific SciMed, Inc.

(2) Related Appeals and Interferences

There are no related appeals or interferences.

(3) Status of Claims

Claims 1-33 stand rejected and are under appeal.

(4) Status of Amendments

All amendments have been entered.

(5) Summary of Claimed Subject Matter

The invention relates to medical instruments, such as biopsy needle instruments. Claims 1, 15, and 22 are in independent form.

Claim 1 reads as follows:

1. A medical instrument, comprising:
 - a housing having a proximal end and a distal end;
 - a stylet having a portion in the housing, the stylet being axially movable between a first extended position and a first retracted position, the stylet being configured such that axial movement of the stylet from the first retracted position to the first extended position causes rotation of the stylet; and

a cannula coaxially receiving the stylet and having a portion in the housing, the cannula being movable between a second extended position and a second retracted position.

Claim 15 reads as follows:

15. A method of using a medical instrument, the method comprising:
moving a stylet and a stylet block from a first position to a second position, the stylet block having an axially moveable first part and a second part attached to the stylet, the second part being rotatably engaged with the first part and being able to rotate relative to an axis of the stylet;
simultaneously causing rotation of the stylet along an axis of the stylet by contact between the second part of the stylet block and a housing of the medical instrument; and
moving a cannula over the stylet.

Claim 22 reads as follows:

22. A medical instrument, comprising:
a housing having a proximal end and a distal end;
a stylet having a portion in the housing, the stylet being movable between a first extended position and a first retracted position, the stylet being configured to rotate when moved from the first retracted position to the first extended position;
a cannula coaxially receiving the stylet and having a portion in the housing, the cannula being movable between a second extended position and a second retracted position; and
a stylet block, the stylet block attached to a proximal end of the stylet and mounted inside the housing, the stylet block comprising:
a first part inside the housing, the first part being moveable between a third extended position and a third retracted position; and
a second part attached to the proximal end of the stylet, the second part being rotatably engaged and in contact with the first part and being able to rotate relative to an axis of the stylet.

Figures 1A and 1B of the appellants' application, which are reproduced below, illustrate a medical instrument 10 (as shown, a needle biopsy device) which includes a housing 12, a stylet 18, and a cannula 20 coaxially receiving the stylet.¹ Both stylet 18 and cannula 20 can be moved between retracted positions as shown in Figure 1A and extended positions as shown in Figure 1B.² During use, stylet 18 and cannula 20 are loaded or cocked to their retracted positions, ready to be triggered.³ Moving stylet 18 to its retracted position compresses spring 42.⁴ When stylet

¹ See, e.g., Application, p. 3, lines 15-17.

² See, e.g., id., p. 3, lines 20-22.

³ See, e.g., id., p. 3, lines 22-23.

⁴ See, e.g., id., p. 5, lines 10-17.

18 and cannula 20 are triggered, the spring 42 propels stylet block 22 and stylet 18 distally to their extended positions, e.g., to collect a tissue specimen.⁵

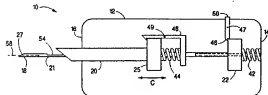


FIG. 1A

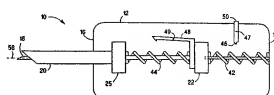


FIG. 1B

Figures 2 and 3A of the appellants' application, which are reproduced below, illustrate stylet block 22 in more detail. Stylet block 22 includes a first, outer part 26 and a second, inner part 28.⁶ The inner part 28 is attached to the proximal end 24 of stylet 18 and can rotate within outer part 26, about the longitudinal axis 58 of the stylet.⁷ The inner part 28 includes a projection or an arm 36 extending radially outward from the inner part and engaging with a track 38.⁸

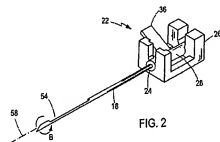


FIG. 2

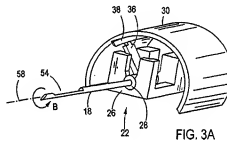


FIG. 3A

As shown in Figure 3A, track 38 can be an elongated channel defined in a curved, semi-cylindrical member 30 connected to housing 12.⁹ In the illustrated embodiment, the track 38 extends helically in a direction parallel to axis 58 so that as spring 42 propels stylet block 22 distally during use, projection 36 travels along the track (e.g., distally and spirally) and rotates inner part 28 and stylet 18 (arrow B).¹⁰ The rotational motion of stylet 18 can enhance its cutting action, thereby enhancing the performance of instrument 10.¹¹

⁵ See, e.g., id., p. 3, lines 23-25; and p. 5, lines 20-22.

⁶ See, e.g., id., p. 3, lines 30-31.

⁷ See, e.g., id., p. 3, line 31 – p. 4, line 1.

⁸ See, e.g., id., p. 4, lines 1-3.

⁹ See, e.g., id., p. 4, lines 3-4.

¹⁰ See, e.g., id., p. 4, lines 4-8; and p. 5, lines 22-24.

¹¹ See, e.g., id., p. 3, lines 27-28.

(6) Grounds of Rejection to be Reviewed on Appeal

Claims 1-11, 15, and 20-30 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,368,045 ("Clement") in view of U.S. Patent No. 5,197,484 ("Kornberg").

Claims 12, 14, 31, and 33 were rejected under 35 U.S.C. 103(a) as being unpatentable over Clement in view of Kornberg further in view of U.S. Patent No. 5,921,943 ("Kass").

Claims 13 and 32 were rejected under 35 U.S.C. 103(a) as being unpatentable over Clement in view of Kornberg further in view of U.S. Patent No. 5,394,887 ("Haaga").

Claim 16 was rejected under 35 U.S.C. 103(a) as being unpatentable over ; Clement in view of Kornberg further in view of U.S. Patent No. 6,331,166 ("Burbank").

Claims 17-19 were rejected under 35 U.S.C. 103(a) as being unpatentable over Clement in view of Kornberg further in view of U.S. Patent No. 5,649,547 ("Ritchart").

(7) Argument

Rejection of claims 1-11, 15, and 20-30 under 35 U.S.C. 103(a) as being unpatentable over Clement in view of Kornberg

Claims 1-11

Independent claim 1

Claims 1-11 are directed to medical instruments including a stylet configured such that
axial movement of the stylet from the first retracted position to the first extended position causes rotation of the stylet.

The Examiner conceded that Clement does not disclose a medical device with a stylet configured to rotate when moved from a retracted position to an extended position.¹²

Kornberg does not remedy the deficiencies of Clement. Kornberg discloses a device with a stylet 58 coaxially received by a cannula 54.¹³ Rotation of driving member 91 causes forward motion of driving pin 94 and attached cannula.¹⁴ Kornberg does not disclose either a stylet or a cannula configured such that axial movement causes rotation. The examiner asserts that

Kornberg discloses a device wherein a cannula 54 is fixedly attached to a pin through a curved channel 158 within the housing such that when energy is provided by spring 130, the pin-cannula assembly is propelled axially forward, such that

¹² See Office Action mailed February 25, 2008, p. 4.

¹³ See Kornberg, FIGS. 11-13 and col. 8, line 63 – col. 10, line 59.

¹⁴ See id., col. 14, lines 26-34.

engagement of the pin through a curved channel 158 within the housing causes both axial translation and rotation of the cannula 54 (see figs. (sic) 16 & 28; see also col. 14, lines 45-50).¹⁵

This is simply incorrect. The text cited by the examiner states that

The forward driving motion and the spiral motion imposed on driving pin 94 results in cannula 54 being both driven forward and rotated. Cannula 54 thus drives through the breast so as to pass by lesion 21 as well as the barbed end of guide wire 52. The final positioning is illustrated in FIG. 28A.¹⁶

Although this passage does not indicate what causes the rotation, Kornberg specifically indicates that when the device is actuated,

the potential energy in torsion spring 130 is released in a manner which causes driving member 91 to rotate.¹⁷

Driving member 91 engages driving pin 94 as illustrated in Kornberg's FIG. 17 (reproduced herein) and, thus, rotation of

driving member 91 causes

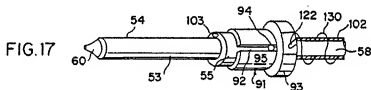
rotation of driving pin 94 and attached cannula 54.¹⁸ Because

driving pin 94 also extends into within spiral cam channel 158, the rotation of driving pin 94 causes forward movement of the driving pin 94 and attached cannula 54.¹⁹ Thus,

rotation of driving member 91 causes driving pin 94 and attached cannula 54 to move forward and in a spiral fashion with respect to stylet 58 while driving pin 94 (or 94') follows or moves within cam channel 158 (or within the grooves provided in cam cylinder 86' or 86'') and driving channel 92.²⁰

rather than forward movement of the cannula causing rotation.²¹ Thus, Clement and Kornberg do not disclose all the features of claim 1.

Appellants do not concede that it would be appropriate to modify Clement's device according to Kornberg's disclosure. Even if such a modification were to be made to Clement's



¹⁵ Advisory action mailed May 27, 2008, p. 2.

¹⁶ Kornberg, col. 14, lines 45-50.

¹⁷ Kornberg, col. 14, lines 26-28.

¹⁸ Kornberg, col. 12, lines 39-47; and col. 14, lines 25-47; see also FIGS. 12 and 22.

¹⁹ Kornberg, col. 9, lines 35-40; col. 12, lines 39-47; and col. 14, lines 25-47; see also FIGS. 12 and 22.

²⁰ Kornberg, col. 14, lines 28-34.

²¹ The examiner asserts that the appellants have not denied that axial movement of the cannula described by Kornberg would cause rotation of the cannula. (See Advisory action mailed May 27, 2008, p. 2.). This is incorrect as the appellants have consistently argued out that the mechanism that Kornberg described for causing axial motion of the cannula is rotation of the cannula. (See, e.g., Reply to Action of February 25, 2008, filed April 3, 2008, pp. 7-8).

device, the resulting device would not have a stylet, coaxially received within a cannula, configured such that axial movement of the stylet causes rotation of the stylet. Rather the resulting device would have a rotating cannula. Even if features of a cannula and a stylet were interchangeable (which Appellants do not concede), the resulting device would be configured such that rotation of the stylet would cause axially motion of the stylet. Moreover, Kornberg discloses stylet 58 is fixed in place by pin member 101.²² Thus, Kornberg, disclosing a device specifically configured to prevent rotation of a stylet, teaches away from the claimed feature.²³

Dependent claims 3, 4, and 5

Dependent claims 3, 4, and 5 further distinguish the cited art even if features of a cannula and a stylet were interchangeable.

Claim 3 specifies that

the stylet block comprises:
a first part inside the housing, the first part being moveable between an extended position and a retracted position; and
a second part attached to the proximal end of the stylet, the second part being rotatably engaged with the first part and being able to rotate relative to an axis of the stylet.

Kornberg discloses a cannula 54 disposed within but not attached to a driving member 91.²⁴ In operation, a driving pin 94, secured to cannula 54, exits drive channel 92 defined in driving member 91 such that the driving pin is free to rotate.²⁵ Thus, cannula 54 is not attached to driving member 91.

Claim 4 further specifies that

the housing comprises a semi-cylindrical portion defining a track configured to engage with the second part.

Kornberg discloses a track 158 which engages driving pin 94.²⁶ However, track 158 does not engage driving member 91 (characterized in the Office Action as the "second part").

Similarly, claim 5 further specifies that

²² See id., col. 9, lines 44-52.

²³ See, e.g., A reference teaches away if it "would likely discourage the art worker from attempting the substitution suggested by [the inventor/patentee]." *Gillette Co. v. S.C. Johnson & Son, Inc.*, 919 F.2d 720, 16 USPQ2d 1923 (CAFC 1990).

²⁴ See Kornberg, col. 9, line 35 – col. 10, line 59 and col. 14, lines 26-34.

²⁵ See id., col. 14, lines 35-44.

²⁶ See id., FIG. 12 and col. 14, lines 35-44.

**the second part comprises:
a projection in contact with a track associated with the housing, the
projection and track capable of cooperating to axially rotate the second part and the
attached stylet when the stylet is moved between the first extended position and the
first retracted position.**

As noted above, driving pin 94 is discrete and separate from driving member 91. Thus, driving member 91 does not comprise driving pin 94. Moreover, engagement between driving pin 91 and track 158 causes axial movement of cannula 54²⁷ rather than rotation of driving member 91.

The examiner previously responded that

In response the Applicant's argument that Kornberg fails to teach a second part as claimed, the Examiner respectfully traverses. Consistent with the Applicant's very own disclosure and partly due to a lack of better enumeration, the numeral 91 has been used in the Office action generically to represent the entire subassembly at the proximal end of the cannula 54 as better depicted in figure 17, which from the Examiner's Office action has been called the second part (see also the Office action dated September 4, 2007). As such, the office action in part contends that the second part includes both elements 55 and 91 of Kornberg. As such, at page 6, the Office action parsingly recite that the second part includes a projection in contact with a track. Moreover, the Applicant's response appears to be a partial response to the rejection at hand since the Examiner has proposed a first reference (i.e. Clement et al.), which clearly shows a first and the second part. The rejection under Kornberg apply primarily to show how the second part of Clement et al. can be modified while keeping the rest of the device substantially intact.²⁸

This argument is inconsistent and serves to emphasize the differences between the structure claimed by the appellants and the teachings of Kornberg. The examiner had previously asserted that Kornberg described a "second part 91 rotatably engaged and in contact with a first part 55."²⁹ By redefining the second part to include "the entire subassembly at the proximal end of cannula 54" including cannula section 55, driving member 91, and driving pin 94, there is no longer, by the examiner's own definitions, a first part rotatably engaged to the second part.

The appellants also note that, rather than asserting that the stylet block "clearly shows a first and second part,"³⁰ the examiner previously asserted that the

In regards to claims 3 & 22, Clement et al. discloses a medical instrument wherein the stylet block 36 comprises: a first part inside the housing 8, the first part being moveable between an extended position and a retracted position (see fig. 2).³¹

²⁷ See id., col. 9, line 35 – col. 10, line 59 and col. 14, lines 26-34.

²⁸ Advisory action mailed May 27, 2008, p. 2.

²⁹ Office Action mailed February 25, 2008, p. 4.

³⁰ Advisory action mailed May 27, 2008, p. 2.

The appellants did not respond to the issue of whether Clement's stylet block has first and second parts because this issue had not previously been raised. However, modifying Clement's stylet block with the mechanism described by Kornberg would not result in the claimed structure for at least the reasons discussed above. Thus, the issue of whether or not Clement's stylet block has first and second parts is a moot point.

Neither Clement nor Kornberg, alone or in combination, discloses or makes obvious the medical instruments covered by claims 1-11. Even if the references were combined, the result would not be the medical devices covered by claims 1-11.

In view of the foregoing discussion, the appellants request that the Board overrule the rejections of claims 1-11 as being unpatentable over Clement in view of Kornberg.

Claim 15, 20, and 21

Claims 15, 20, and 21 are directed to methods that include

moving a stylet and a stylet block from a first position to a second position, the stylet block having an axially moveable first part and a second part attached to the stylet, the second part being rotatably engaged with the first part and being able to rotate relative to an axis of the stylet[.]

As discussed above with respect to claims 3 and 5, driving member 91 of Kornberg is not attached to cannula 54. Moreover, driving member 91 rotates (rather than moves with cannula 54 from a first position to a second position).³² For at least the reasons discussed above with respect to claims 3 and 5, even under the Examiner's redefinition of second part, Kornberg does not disclose a stylet block with the claimed features.

Claim 15 further recites

simultaneously causing rotation of the stylet along an axis of the stylet by contact between the second part of the stylet block and a housing of the medical instrument[.]

As discussed above with respect to claim 1, Kornberg discloses causing rotation of cannula 54 by rotation of driving member 91.³³ Contact between driving pin 94 and track 158 causes axial movement of cannula 54³⁴ rather than rotation of cannula 54 as claimed.

³¹ Office Action mailed February 25, 2008, p. 3

³² See id., FIG. 12, col.9, line 35 – col. 10, line 13, and col.4, line 19 – col. 15, line 15.

³³ See id., col. 9, line 35 – col. 10, line 59 and col. 14, lines 26-34.

Neither Clement nor Kornberg, alone or in combination, discloses or makes obvious the medical instruments covered by claims 15-21. Even if the references were combined, the result would not be the medical devices covered by claims 15-21.

In view of the foregoing discussion, the appellants request that the Board overrule the rejections of claims 15, 20, and 21 as being unpatentable over Clement in view of Kornberg.

Claims 22-30

Independent claim 22

Independent claim 22 recites

being configured to rotate when moved from the first retracted position to the first extended position[.]

As discussed above with respect to claims 1-11, neither Clement nor Kornberg discloses or makes obvious medical instruments with such a stylet. Independent claim 22 further recites the feature of a stylet block including

a first part inside the housing, the first part being moveable between a third extended position and a third retracted position; and

a second part attached to the proximal end of the stylet, the second part being rotatably engaged and in contact with the first part and being able to rotate relative to an axis of the stylet.

As discussed above with respect to claims 3 and 5, Kornberg does not disclose a stylet block with the claimed features.

Dependent claim 24

Dependent claim 24 further specifies that the second part of the stylet block includes

a projection in contact with a track associated with the housing, the projection and track capable of cooperating to axially rotate the second part and the attached stylet when the stylet block is moved between the third extended position and the third retracted position.

As discussed above with respect to claim 5, engagement between driving pin 91 and track 158 causes axial movement of cannula 54³⁵ rather than rotation of driving member 91.

³⁴ See id.

³⁵ See id.

Neither Clement nor Kornberg, alone or in combination, discloses or makes obvious the medical instruments covered by claims 22-30. Even if the references were combined, the result would not be the medical devices covered by claims 22-30.

In view of the foregoing discussion, the appellants request that the board overrule the rejections of claims 22-30 as being unpatentable over Clement in view of Kornberg.

Rejection of claims 12, 14, 31, and 33 under 35 U.S.C. 103(a) as being unpatentable over Clement in view of Kornberg further in view of Kass

Claims 12 and 14 depend from claim 1 and claims 31 and 33 depend from claim 22. The examiner asserts that Kass discloses the features of the stylet notch recited by claims 12, 14, 31, and 33.³⁶ However, neither the stylet nor the cannula rotate in the biopsy system described by Kass. Thus, Kass does not cure the deficiencies of the proposed combination of Clement and Kornberg as discussed above with respect to independent claims 1 and 22. None of Clement, Kornberg, and Kass, alone or in combination, discloses or makes obvious the medical instruments covered by claims 12, 14, 31, and 33. Even if the references were combined, the result would not be the medical devices covered by claims 12, 14, 31, and 33. Accordingly, Appellants request that the board overrule the rejection of claims 12, 14, 31, and 33 as being unpatentable over Clement in view of Kornberg further in view of Kass.

Rejection of claims 13 and 32 under 35 U.S.C. 103(a) as being unpatentable over Clement in view of Kornberg further in view of Haaga

Claim 13 depends from claim 1 and claim 32 depends from claim 22. The examiner asserts that Haaga discloses the features of the stylet notch recited by claims 13 and 32.³⁷ However, neither the stylet nor the cannula rotate in the biopsy system described by Haaga. Thus, Haaga does not cure the deficiencies of the proposed combination of Clement and Kornberg as discussed above with respect to independent claims 1 and 22. None of Clement, Kornberg, and Haaga, alone or in combination, discloses or makes obvious the medical instruments covered by claims 12, 14, 31, and 33. Even if the references were combined, the

³⁶ See Office Action mailed February 25, 2008, p. 5.

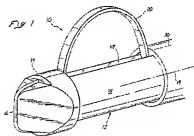
³⁷ See Office Action mailed February 25, 2008, p. 6.

result would not be the medical devices covered by claims 13 and 32. Accordingly, Appellants request that the board overrule the rejection of claims 13 and 32 as being unpatentable over Clement in view of Kornberg further in view of Haaga.

Rejection of claims 16 under 35 U.S.C. 103(a) as being unpatentable over : Clement in view of Kornberg further in view of Burbank

Claim 16 depends from claim 15. The examiner asserts that Burbank discloses oscillating the stylet 18 along the axis.³⁸ However, Burbank does not disclose or make obvious “[a] stylet block having an axially moveable first part and a second part attached to the stylet, the second part being rotatably engaged with the first part and being able to rotate relative to an axis of the stylet” nor “simultaneously causing rotation of the stylet along an axis of the stylet by contact between the second part of the stylet block and a housing of the medical instrument” as recited by claim 15.

Rather Burbank describes a cutting element 20 (illustrated in Burbank's FIG. 1 reproduced below) that was previously characterized by the Examiner as a stylet block.³⁹ But, cutting element 20 is attached to a rod 32 rather than contacting housing 28.⁴⁰ Rotation of shaft 18 (characterized by the Examiner as a stylet) causes rotation of cutting element 20 rather than engagement of cutting element 20 with another element causing rotation of shaft 18.⁴¹ Therefore, engagement between cutting element 20 and housing 28 does not cause rotation of a stylet.



³⁸ See Office Action mailed February 25, 2008, p. 7.

³⁹ Office Action mailed June 1, 2007, p. 4.

⁴⁰ See Burbank, col. 5, lines 35-62.

⁴¹ See id., col. 5, lines 35-42.

Thus, Burbank does not cure the deficiencies of the proposed combination of Clement and Kornberg as discussed above with respect to independent claim 15. None of Clement, Kornberg, and Burbank, alone or in combination, discloses or makes obvious the medical instruments covered by claim 16. Even if the references were combined, the result would not be the medical devices covered by claim 16. Accordingly, Appellants request that the board overrule the rejection of claim 16 as being unpatentable over Clement in view of Kornberg further in view of Burbank.

Rejection of claims 17-19 under 35 U.S.C. 103(a) as being unpatentable over Clement in view of Kornberg further in view of Ritchart

Claims 17-19 depend from claim 15. The examiner asserts that Ritchart discloses the features recited by claims 17-19.⁴² However, neither the stylet nor the cannula rotate in the biopsy system described by Ritchart. Thus, Ritchart does not cure the deficiencies of the proposed combination of Clement and Kornberg as discussed above with respect to independent claim 15. None of Clement, Kornberg, and Ritchart, alone or in combination, discloses or makes obvious the medical instruments covered by claims 17-19. Even if the references were combined, the result would not be the medical devices covered by claims 17-19. Accordingly, Appellants request that the board overrule the rejection of claims 17-19 as being unpatentable over Clement in view of Kornberg further in view of Ritchart.

⁴² See Office Action mailed February 25, 2008, p. 7.

Conclusion

In view of the foregoing discussion, the appellants request that the board overrule the rejection of claims 1-33 as being unpatentable over the cited references.

The brief fee in the total amount of \$510 is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply all charges or credits to Deposit Account No. 06 1050, referencing Attorney Docket No. 01194-0824001.

Respectfully submitted,

Date: July 8, 2008

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Appendix of Claims

1. A medical instrument, comprising:

a housing having a proximal end and a distal end;

a stylet having a portion in the housing, the stylet being axially movable between a first extended position and a first retracted position, the stylet being configured such that axial movement of the stylet from the first retracted position to the first extended position causes rotation of the stylet; and

a cannula coaxially receiving the stylet and having a portion in the housing, the cannula being movable between a second extended position and a second retracted position.

2. The instrument of claim 1, further comprising a stylet block attached to a proximal end of the stylet and mounted inside the housing.

3. The instrument of claim 2, wherein the stylet block comprises:

a first part inside the housing, the first part being moveable between an extended position and a retracted position; and

a second part attached to the proximal end of the stylet, the second part being rotatably engaged with the first part and being able to rotate relative to an axis of the stylet.

4. The instrument of claim 3, wherein the housing comprises a semi-cylindrical portion defining a track configured to engage with the second part.

5. The instrument of claim 3, wherein the second part comprises:

a projection in contact with a track associated with the housing, the projection and track capable of cooperating to axially rotate the second part and the attached stylet when the stylet is moved between the first extended position and the first retracted position.

6. The instrument of claim 5, wherein the track is molded into the interior side of the housing.

7. The instrument of claim 5, wherein the track is configured to provide unidirectional rotation to the stylet.

8. The instrument of claim 5, wherein the track is configured to provide multidirectional rotation to the stylet.

9. The instrument of claim 1, further comprising:
a stylet spring capable of moving the stylet from the first retracted position to the first extended position; and
a cannula spring capable of moving the cannula from the second retracted position to the second extended position.

10. The instrument of claim 1, further comprising:
a first pivoting latch capable of retaining the stylet in a predetermined position when the stylet is in the first retracted position; and

a second pivoting latch capable of retaining the cannula in a predetermined position when the cannula is in the second retracted position.

11. The instrument of claim 1 wherein the stylet comprises a notch with a sharpened leading edge.

12. The instrument of claim 1, wherein the stylet comprises a notch having two openings.

13. The instrument of claim 1, wherein the stylet comprises a notch with a ramped surface.

14. The instrument of claim 13, wherein the stylet further comprises an opening opposing the notch.

15. A method of using a medical instrument, the method comprising:
moving a stylet and a stylet block from a first position to a second position, the stylet block having an axially moveable first part and a second part attached to the stylet, the second part being rotatably engaged with the first part and being able to rotate relative to an axis of the stylet;

simultaneously causing rotation of the stylet along an axis of the stylet by contact between the second part of the stylet block and a housing of the medical instrument; and

moving a cannula over the stylet.

16. The method of claim 15, further comprising oscillating the stylet along the axis.

17. The method of claim 15, further comprising collecting a sample in a notch of the stylet.

18. The method of claim 17, further comprising removing the sample from the notch by inserting an object through an opening located in the notch.

19. The method of claim 17, further comprising removing the sample over an inclined portion of the notch.

20. The method of claim 15, comprising rotating the stylet in one direction.

21. The method of claim 15, comprising rotating in multiple directions.

22. A medical instrument, comprising:

a housing having a proximal end and a distal end;

a stylet having a portion in the housing, the stylet being movable between a first extended position and a first retracted position, the stylet being configured to rotate when moved from the first retracted position to the first extended position;

a cannula coaxially receiving the stylet and having a portion in the housing, the cannula being movable between a second extended position and a second retracted position; and

a stylet block, the stylet block attached to a proximal end of the stylet and mounted inside the housing, the stylet block comprising:

a first part inside the housing, the first part being moveable between a third extended position and a third retracted position; and

a second part attached to the proximal end of the stylet, the second part being rotatably engaged and in contact with the first part and being able to rotate relative to an axis of the stylet.

23. The instrument of claim 22, wherein the housing comprises a semi-cylindrical portion defining a track configured to engage with the second part.

24. The instrument of claim 22, wherein the second part comprises:

a projection in contact with a track associated with the housing, the projection and track capable of cooperating to axially rotate the second part and the attached stylet when the stylet block is moved between the third extended position and the third retracted position.

25. The instrument of claim 24, wherein the track is molded into the interior side of the housing.

26. The instrument of claim 24, wherein the track is configured to provide unidirectional rotation to the stylet.

27. The instrument of claim 24, wherein the track is configured to provide multidirectional rotation to the stylet.

28. The instrument of claim 22, further comprising:
a stylet spring capable of moving the stylet from the first retracted position to the first extended position; and
a cannula spring capable of moving the cannula from the second retracted position to the second extended position.

29. The instrument of claim 22, further comprising:
a first pivoting latch capable of retaining the stylet in a predetermined position when the stylet is in the first retracted position; and
a second pivoting latch capable of retaining the cannula in a predetermined position when the cannula is in the second retracted position.

30. The instrument of claim 22, wherein the stylet comprises a notch with a sharpened leading edge.

31. The instrument of claim 22, wherein the stylet comprises a notch having two openings.

32. The instrument of claim 22, wherein the stylet comprises a notch with a ramped surface.

33. The instrument of claim 32, wherein the stylet further comprises an opening opposing the notch.

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Evidence Appendix

NONE

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Related Proceedings Appendix

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